

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB2004/000014

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12P1/00 C12P17/18

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C12P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, MEDLINE, BIOSIS, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SHELDON R A ET AL: "Biocatalysis in ionic liquids"	1-7, 20-25,27
Y	GREEN CHEMISTRY, vol. 4, 2002, pages 147-151, XP008030161 the whole document page 150, right-hand column, line 1-8 page 150, right-hand column, line 21 -page 151, left-hand column, line 6 table 4 page 151, right-hand column, line 4-8 --- -/-	1-27

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

26 April 2004

Date of mailing of the international search report

17/05/2004

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KAFTZIK N ET AL: "Use of ionic liquids to increase the yield and enzyme stability in the beta-galactosidase catalysed synthesis of N-acetylglucosamine" ORGANIC PROCESS RESEARCH & DEVELOPMENT, vol. 6, no. 4, July 2002 (2002-07), pages 553-557, XP002277877 cited in the application	12,18,19
Y	page 553, right-hand column, line 19 -page 554, left-hand column, line 19 table 1	1-27
Y	page 557, left-hand column, line 8-18 page 557, left-hand column, line 29-50 ---	1-27
Y	EP 1 205 555 A (SOLVENT INNOVATION GMBH) 15 May 2002 (2002-05-15) cited in the application the whole document page 3, line 6 -page 4, line 22 page 7, line 3-18 example 1 claims 1-14 ---	1-27
Y	WO 01/55060 A (SOLVENT INNOVATION GMBH ;BOLM CARSTEN (DE); KEIM WILHELM (DE); BOE) 2 August 2001 (2001-08-02) page 3, line 14-21 example 4 claims 13,14 ---	1-11, 13-27
Y	WASSERSCHIED P ET AL: "Synthesis and properties of ionic liquids derived from the 'chiral pool'" CHEMICAL COMMUNICATIONS, 2002, pages 200-201, XP002278019 compounds 2 and 3 ---	1-11, 13-27
Y	HOWARTH J ET AL: "Immobilized baker's yeast reduction of ketones in an ionic liquid, 'bmim!PF6 and water mix'" TETRAHEDRON LETTERS, vol. 42, no. 42, 15 October 2001 (2001-10-15), pages 7517-7519, XP004306087 ISSN: 0040-4039 the whole document ---	9-19
A	KRAGL U ET AL: "Enzyme catalysis in ionic liquids" CURRENT OPINION IN BIOTECHNOLOGY, vol. 13, no. 6, December 2002 (2002-12), pages 565-571, XP002267363 ISSN: 0958-1669 the whole document page 566, right-hand column, line 11-25 ---	1-27
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>SHELDON R: "Catalytic reactions in ionic liquids" CHEMICAL COMMUNICATIONS, no. 23, 18 October 2001 (2001-10-18), pages 2399-2407, XP002218386 ISSN: 1359-7345 page 2406, left-hand column, line 1 -right-hand column, line 15</p>	1-27
A	<p>SHELDON R A ET AL: "Overview of biocatalysis in ionic liquids" ABSTRACTS OF PAPERS AMERICAN CHEMICAL SOCIETY, vol. 224, no. 1-2, 2002, page IEC 100 XP002277878 224th National Meeting of the American Chemical Society; Boston, MA, USA; August 18-22, 2002 ISSN: 0065-7727 abstract 100.</p>	1-27
A	<p>GORDON C M: "New developments in catalysis using ionic liquids" APPLIED CATALYSIS A: GENERAL, vol. 222, no. 1-2, 20 December 2001 (2001-12-20), pages 101-117, XP002277887 ISSN: 0926-860X the whole document paragraph 8</p>	1,12,13, 20,27
Y	<p>HARI KRISHNA S: "Developments and trends in enzyme catalysis in nonconventional media" BIOTECHNOLOGY ADVANCES, vol. 20, no. 3-4, November 2002 (2002-11), pages 239-266, XP004392781 ISSN: 0734-9750 paragraph 1 paragraph 4.1</p>	10-19
P,X	<p>VAN RANTWIJK F ET AL: "Biocatalytic transformations in ionic liquids" TRENDS IN BIOTECHNOLOGY, vol. 21, no. 3, March 2003 (2003-03), pages 131-138, XP004412613 ISSN: 0167-7799 the whole document table 1 page 133, left-hand column, line 1-5 page 133, left-hand column, line 26-31</p>	1-7, 20-25,27

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Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
T	HOLBREY J D ET AL: "New ionic liquids containing an appended hydroxyl functionality from the atom-efficient, one-pot reaction of 1-methylimidazole and acid with propylene oxide" GREEN CHEMISTRY, vol. 5, no. 6, 2003, pages 731-736, XP008030128 abstract ---	
T	DATABASE WPI Section Ch, Week 200355 Derwent Publications Ltd., London, GB; Class A97, AN 2003-578476 XP002277881 & CN 1 417 407 A (INST CHEM CHINESE ACAD SCI), 14 May 2003 (2003-05-14) abstract ---	
T	WASSERSCHIED P: "Recent developments in using ionic liquids as solvents and catalysts for organic synthesis" ORGANIC SYNTHESIS HIGHLIGHTS , vol. V, 2003, pages 105-117, XP008030109 EDITOR(S): SCHMALZ H-G ET AL. PUBLISHER: WILEY-VCH VERLAG GMBH & CO. KGAA, WEINHEIM, GERMANY. the whole document page 108, line 16-26 figure 2 ---	
T	PARK S ET AL: "Biocatalysis in ionic liquids - Advantages beyond green technology" CURRENT OPINION IN BIOTECHNOLOGY, vol. 14, no. 4, August 2003 (2003-08), pages 432-437, XP002263437 ISSN: 0958-1669 the whole document ---	
T	WALKER A J ET AL: "Combined biological and chemical catalysis in the preparation of oxycodone" TETRAHEDRON, vol. 60, no. 3, 12 January 2004 (2004-01-12), pages 561-568, XP004482867 ISSN: 0040-4020 the whole document -----	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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			WO 0238784 A1	16-05-2002
			EP 1332221 A1	06-08-2003
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